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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,969	03/19/2004	Ashok Burton Tripathi	STI-PAUS0001	6472
58937	7590	07/19/2006	EXAMINER	
WOLFF LAW OFFICE, PLLC 209 PROVIDENCE RD. CHAPEL HILL, NC 27514			TRINH, SONNY	
			ART UNIT	PAPER NUMBER
			2618	

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/803,969	TRIPATHI, ASHOK BURTON	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sonny TRINH	2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1-10, 13-27, 30-39, 42-43** are rejected under 35 U.S.C. 102(b) as being anticipated by Hershtig (U.S. Patent Number 6.212.404 B1).

Regarding **claim 1**, with reference to figures 12b-17 and their descriptions (column 6 line 10 to column 7 line 60), Hershtig discloses a wireless communication system comprising: a receiver front end having a first set of components (such as low noise amplifier 4) and configured so that the receiver front end may be upgraded to a second set of components, the second set of components being configured to operate according to predetermined receiver front end characteristics (see particularly figure 12b and column 6 lines 10-21).

Regarding **claim 2**, Hershtig further discloses that the second set of components is configured to provide greater received signal sensitivity than the first set of components (figure 13, column 6 lines 22-61).

Regarding **claim 3**, Hershtig further discloses that the second set of components includes one or more cryogenically cooled components (figure 13, column 6 lines 22-61).

Regarding **claims 4-5**, Hershtig further discloses that the cryogenically cooled components includes at least one cryogenically cooled amplifier such as the low noise amplifier (figure 13, column 6 lines 22-61).

Regarding **claim 6**, Hershtig further discloses that the second set of components provides greater channel selectivity than the first set of components (figure 13, column 6 lines 22-61, column 5 lines 6-15).

Regarding **claim 7**, Hershtig further discloses that the second set of components includes one or more high temperature superconductor components (column 10 line 9 to column 11 line 12).

Regarding **claim 8**, Hershtig further discloses that the temperature superconductor components includes at least one high temperature superconductor filter (see table in column 14).

Regarding **claim 9**, Hershtig further discloses that the second set of components includes at least one cryogenically cooled amplifier (figure 13) and at least one high temperature superconductor filter (see table in column 14).

Regarding **claim 10**, Hershtig further discloses that the second set of components includes a subset of the first set of components (such as the cryogenically cooled amplifier in figure 13).

Regarding **claim 13**, Hershtig further discloses a base station wherein the receiver front end is a component coupled to the base station (see for example figure 13 and description).

Regarding **claim 14**, it is inherent that the housing for the receiver front end having three dimensions of sufficient size to accommodate at least a portion of the first set of components and the second set of components (sufficient to house a cryogenically cooled component "LNA").

Regarding **claim 15**, with reference to figures 12b-17 and their descriptions (column 6 line 10 to column 7 line 60), Hershtig discloses a receiver or transceiver front end, comprising: a plurality of functional modules (such as RX filter, low noise amplifier in figure 13), wherein said plurality of modules includes at least one of a high temperature superconductor component (column 10 line 9 to column 11 line 12) and one of a cryogenically cooled component (figure 13, element 21).

Regarding **claim 16**, Hershtig further discloses that the high temperature superconductor component is a high temperature superconductor filter (see table in column 14).

Regarding **claim 17**, Hershtig further discloses that the cryogenically cooled component is a cryogenically cooled amplifier (figure 13, see description).

Regarding **claim 18**, with reference to figures 1-2, and their descriptions (column 4 line 60 to column 6 line 9, figures 12b-17 column 6 line 10 to column 7 line 60), Hershtig discloses a base station system (figures 1-2), comprising: a receiver having a front end including a first component that operates at a first predetermined characteristic

and configured so that the front end may be upgraded to further include one or more second components, the second component operating at a second predetermined characteristic (see particularly figure 12b and column 6 lines 10-21).

Regarding **claim 19**, Hershtig further discloses that the first component is a low noise amplifier (figure 13, LNA 4).

Regarding **claim 20**, Hershtig further discloses that the second component is configured to provide greater received signal sensitivity than the first component (figure 13, column 6 lines 22-41).

Regarding **claim 21**, Hershtig further discloses that the second component includes one or more cryogenically cooled components (figure 13, cooler 21).

Regarding **claims 22-23**, Hershtig further discloses that the cryogenically cooled components includes at least one cryogenically cooled amplifier such as a low noise amplifier (figure 13, LNA 4).

Regarding **claim 24**, Hershtig further discloses that the second component is further configured to provide greater channel selectivity than the first component (figure 13, column 6 lines 22-41).

Regarding **claim 25**, Hershtig further discloses that the second component includes one or more high temperature superconductor components (column 10 line 9 to column 11 line 12).

Regarding **claim 26**, Hershtig further discloses that the high temperature superconductor components includes at least one high temperature superconductor filter. (see table in column 14).

Regarding **claim 27**, Hershtig further discloses that the second component includes a subset of the first component (figure 13, element 8).

Regarding **claim 30**, it is inherent that the housing for the receiver front end having three dimensions of sufficient size to accommodate at least a portion of the first set of components and the second set of components (sufficient to house a cryogenically cooled component "LNA").

Regarding **claim 31**, with reference to figures 1-2, 12b-17, and their descriptions (column 5 line 30-58, column 6 line 10 to column 7 line 60), Hershtig discloses a receiver or transceiver front end, comprising: a housing to accommodate a first complete set of front end signal components that require a first volume of the housing (figures 1-2, tower mount cryogenic refrigeration unit), the housing further including an additional volume for allowing the receiver front end to be upgraded to have a second complete set of receiver front end signal components (figure 13).

Regarding **claim 32**, Hershtig further discloses that the second set of components is configured to provide greater received signal sensitivity than the first set of components (figure 13, column 6 lines 22-61).

Regarding **claim 33**, Hershtig further discloses that the second set of components includes one or more cryogenically cooled components (figure 13, cryogenic refrigeration unit 21).

Regarding **claims 34-35**, Hershtig further discloses that the one or more cryogenically cooled components includes at least one cryogenically cooled amplifier such as the low noise amplifier (figure 13, LNA 4).

Regarding **claim 36**, Hershtig further discloses that the second set of components is configured to provide greater channel selectivity than the first set of components (figure 13, column 6 lines 22-41).

Regarding **claim 37**, Hershtig further discloses that the second set of components includes one or more high temperature superconductor components (column 10 line 9 to column 11 line 12).

Regarding **claim 38**, Hershtig further discloses that one or more high temperature superconductor components includes at least one high temperature superconductor filter (see table in column 14).

Regarding **claim 39**, Hershtig further discloses that the second set of components includes a subset of the first set of components (figure 13, see description).

Regarding **claims 42-43**, these claim merely reflect the method claim as opposed to the apparatus claim of claim 1 and is therefore rejected for the same reasons.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 11-12, 28-29, 40-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hershtig (U.S. Patent Number 6.212.404 B1).



Regarding **claims 11-12, 28-29**, Hershtig discloses the invention but does not explicitly disclose that the first set of components and the second set of components include a dual duplexer configured to provide one or more duplexed channels nor the number of duplexed channels is six.

However, it would have been obvious and well within the level of a person of ordinary skill in the art at the time the invention was made to incorporate a duplexer so that components in the transmit path are packaged and/or shared with those components in the receive path. The number of duplexed channels is also well within the level of a person of ordinary skill in the art, depending on the requirement of the system.

Regarding **claims 40-41**, Hershtig discloses the invention but does not disclose that the total volume of the housing is approximately equal to or greater than 8064 cubic inches nor the housing is three dimensional and at least two of three dimensions of the housing is approximately equal to or greater than 24 inches. It would have been an obvious matter of design choice to size the housing according to the requirement, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

## CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonny TRINH whose telephone number is 571-272-7927. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward URBAN can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

7/12/06

  
SONNY TRINH  
PRIMARY EXAMINER